THE BOSTON
MEDICAL AND SURGICAL JOURNAL.

VOL. CI. — THURSDAY, AUGUST 14, 1879. — NO. 7.

CASES OF OSTEOCLASIS.

BY A. T. CABOT, A. M., M. D.

In Vienna, in the winter of 1876, I saw for the first time the osteoclast of Rizzoli in use, and was astonished to see with how little injury to the soft parts strong bones could be fractured with it. This instrument was devised by an Italian surgeon, Rizzoli, and used by him, in 1847, to fracture the femur of a young girl in whom one leg was considerably shorter than the other, his object being to cause the ends of the fragments to lap, and so to shorten the leg operated on to match the other. Previous to this time bones had frequently been refractured for badly united fractures, but this is the first case on record in which a previously unbroken bone was deliberately fractured for orthopædic purposes. Since then the instrument has been frequently used by Continental surgeons for the cure of deformities.

The cases which follow were operated upon with an instrument (Figure 1) made as nearly as possible after the one I saw in Vienna. The mechanism is so simple as to be understood at a glance. The limb is held in the rings, which may be adjusted at any required point on the cross-bar, and the pressure is then brought to bear with the crutch upon the point where the fracture is to be made. In practice the fracture does occur almost exactly at the point where the pressure is made, even if the rings holding the bone are at unequal distances from this point. It was found best in applying the instrument to the lower leg to bring the pressure to bear on the outside, where the bones are well padded with muscles. In this way, too, you have the advantage of attacking the tibia in its narrower and consequently weaker diameter. When it can be avoided, the counter-pressure with the rings should not bear upon the epiphyses of young bones.

Case I. A scrofulous-looking girl of four years had very great bowing of the lower legs outwards and forwards. The femora were quite straight. She walked insecurely, and with considerable rolling in her gait.

August 31, 1878, Dr. S. Cabot operated, with the assistance of Drs. Bradford, Post, and myself. The child was etherized, and both legs were fractured with the osteoclast, straightened, and put into plaster bandages. After recovering from the ether she was annoyed rather by the confinement of the bandages than by any real pain. There was no apparent swelling, and after the first day the child's appetite was as good as before the operation. At the end of three weeks the bandages were removed, and the union seemed firm, though no callus could be felt. Two days later, a slight tendency to bend at the point of fracture manifested itself, and side splints were applied. These were kept on for about five weeks more. The child now played about the room, and walked with tolerable ease if held by the hand. The legs were perfectly straight. She soon began, however, to be peevish; had a slight cough, and very little appetite.

November 20th. Cerebral symptoms appeared; slow pulse, inequality of pupils, headache, *taches cérébrales*, and, a day or two later, several slight convulsions. She died November 29th, just three months after the operation.

The autopsy revealed a general miliary tuberculosis, affecting especially the membranes of the brain and the lungs. Two old cheesy masses of tubercles on the cerebellum were probably of several months' standing. The left tibia was removed. Figure 2 gives a longitudinal section of this bone. At *a* an imperfectly marked transverse line indicates the point of fracture, and the medullary cavity is somewhat narrowed at this point, though by no means obliterated. A thin layer of spongy bone envelops the tibia, extending for one to one and a half inches above and below the fracture.

The next two cases occurred in the practice of Dr. C. B. Porter, who kindly consented to report them in this series.

CASE II. Eva D., colored, aged five years. Parents healthy, as also her brothers and sisters. Soon after she began to try to walk it was noticed that both tibiæ bowed forwards. The humeri also bent outwards. No measures were taken to arrest or correct the deformity, which gradually increased, until the bones became strong and fixed in their deformed position.

October 16, 1878, she entered the Massachusetts General Hospital. The tibiæ were bowed very acutely forward, the bend in each leg being a little below the middle of the bone. The child walked with a slow, shuffling gait, turning the toes far out, and rolling from side to side at each step. The heels were very prominent and the feet flat.

October 19th. Dr. Porter performed the operation for osteotomy on the left leg under carbolic spray, and with all antiseptic precautions. At the point of greatest angle an incision three inches long was made over the crest of the tibia. A crucial incision was made in the periosteum, and the flaps were reflected. A V-shaped piece of bone, including about two thirds the thickness of the shaft, was then sawn from the tibia, and the leg straightened. The fibula, fractured in straightening the leg, and the ends of the tibia were then wired together. A Lister dressing was applied, and the leg laid on a ham splint. For four days there was some pain, but after that the child was perfectly comfortable.

October 27th (eight days after preceding operation). The child was again etherized, and the right leg was fractured with the osteoclast. The deformity was so great that the tendo-Achillis had to be cut before the leg could be straightened, and even then there was considerable overlapping of the fragments. A plaster-of-Paris bandage was applied while the leg was strongly extended by an assistant.

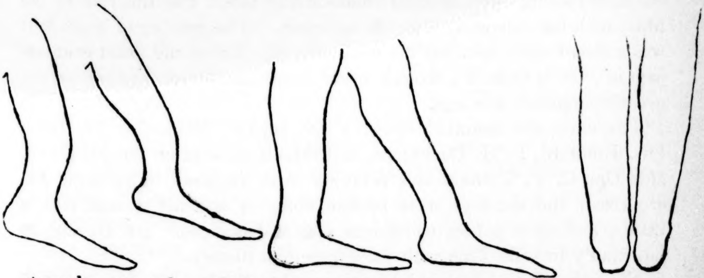
From this operation the child was in pain for one day only. The leg upon which osteotomy had been done was soon after this put in side splints, there being some tendency to lateral displacement.

December 5th. Plaster bandage removed from the right leg. It was found firmly united, with, however, considerable overlapping. A little fragment of bone was movable at the point of fracture, but it soon after became attached and solid.

December 11th (seven weeks and a half from date of operation). The wire was removed from the left leg, which had long been firmly united.

December 17th. She began to walk, and soon did so easily. Late in January, after her legs had been much handled and examined, a small abscess formed over the seat of fracture in the left leg, and two small pieces of bone were discharged, after which it healed quickly, and has given no further trouble.

CASE III. Margaret J., colored, aged ten. In this case the deformity was confined to the lower extremities. The femora were bent strongly outwards, and the bones of the lower legs sharply forwards, at about the junction of the middle and lower thirds. The feet were very large and flat, with very prominent heels. She walked with a shuffling gait, rolling from side to side, and had considerable difficulty in maintaining an erect position.



November 2d. The child was etherized, and both lower legs were

fractured with the osteoclast. Fearing that the bones would not break at the desired place, Dr. Porter, before applying the osteoclast, introduced a fine drill through the puncture of a tenotomy knife, and perforated the tibiæ with two or three holes at the most prominent part. There being difficulty in bringing the legs straight, he cut the tendo-Achillis in each. The punctures were all made with antiseptic precautions. The legs now came down into good position, with no lapping of the ends of the bones, and were put into plaster bandages. For one day and night there was considerable pain, and the temperature rose to 100° F. After that, the child was perfectly easy, and the temperature normal.

November 9th. Plaster bandages were removed. Legs in good position. A superficial small collection of pus, at point where drill was entered in right leg, was evacuated, and gave no further trouble. Plaster bandages reapplied.

December 4th (four weeks and three days from date of operation). Bandages removed. Legs firmly united in good position. A slight ulceration at point where abscess had occurred in right leg.

December 10th (five weeks and three days after operation). Child allowed to walk. For three days she had a good deal of difficulty in so doing, but after that rapidly improved, and left the hospital walking much better than at entrance, though still with a roll, caused by the deformity of the femora, which the parents refused to have corrected. The figures, showing state of legs before and after operation are tracings from photographs.

Case IV. occurred at the Children's Hospital in the service of Dr. Ingalls. A little girl, aged four years, had both legs much bowed, the curvature being most marked immediately below the tubercle of the tibia, with the convexity directly outwards. The tracing of these legs was unfortunately lost, but the deformity was almost the exact counterpart of that in Case V., though made somewhat more striking by the greater length of the legs.

The child was operated upon by Dr. Ingalls, November 27, 1878. Drs. Bradford, F. H. Davenport, and myself assisted at the operation, and Drs. C. P. Putnam and Whitney were present. The child was etherized, and the legs were broken between the upper and middle thirds, and then put as usual into plaster bandages. Dr. Davenport has kindly furnished me with the subsequent history.

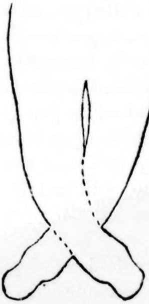
November 29th. The child has seemed perfectly well since recovering from the ether. No rise in temperature followed the operation.

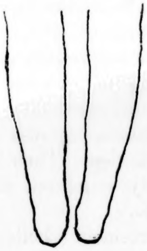
December 26th (four weeks from operation). Plaster bandages removed. Legs in good condition, and straight.

January 2d. The child walks a little, though weakly.

May 9th. I visited the child at its home. She walked well and steadily, though she still toed in somewhat. The mother said she was much stronger on her legs than before the operation, and was greatly pleased with the result. In this and in Case V. the tracings were taken directly from the legs, and reduced with a pantograph.

Case V. I saw by the kindness of Dr. C. P. Putnam. The patient was a boy of three years. The curvature was mainly in the upper third of the leg, as may be seen in the tracing. Dr. Putnam operated December 21, 1878, with the assistance of Dr. Bradford and myself. The legs were broken at about the junction of the upper and middle thirds. Plaster bandages were immediately applied. The child was cared for at home, and for the subsequent history I rely upon the mother. She thinks the child suffered but little from pain, though, being a fussy boy, he fretted at having the bandages on his legs. Four weeks after operation the bandages were removed by Dr. Putnam, and the legs were found well united, straight, and with the skin in good condition.





Much has been done of late for the correction of deformity by osteotomy; but these cases go far to demonstrate, I think, that in a large proportion of deformities long bones can be better straightened by *simple* fracture without the aid of cutting instruments. The small amount of disturbance of the tissues by this operation is shown by the absence of swelling or callus in any of the cases, and by the most perfect union of the bone in Case I. (Figure 2), where, three months after the operation, the medullary cavity was found unobliterated.

The immediate application of the plaster bandage reduces to the minimum this disturbance of the parts injured. While the operator is applying the plaster bandages, an assistant can hold the toes firmly with one hand, and with the other a loop of soft bandage, passed over the point of fracture. This enables him to hold the parts steadily in good position while the plaster sets.

Cases of extreme deformity, where, after the fracture, the ends of the bone slide a considerable distance past each other, and those in which the deformity is in very close proximity to a joint, may perhaps be best reserved for osteotomy. In all other cases the present operation, I think, not only offers the patient a better chance for a quick and safe recovery, but also gives quite as straight, if not a straighter, limb.

EXCREMENTAL DISEASES: THEIR CAUSATION AND THEIR PREVENTION BY HYGIENIC MEANS.

BY GEORGE E. WARING, JR., NEWPORT, R. I.

The danger always exists that one who writes on a special source of disease, and who studies its various bearings, may overestimate its relative importance and find a universal bane in its action, a universal panacea in its suppression or removal. While the effort will be made to avoid giving this extreme impression, and while this paper is written under a full appreciation of other morbific agencies and of other hygienic processes, regard will be had only to diseases caused by excremental pollution. Their serious character will not be overstated; they will only stand out more prominent and conspicuous because standing alone.

Human excrement is believed to have a twofold ætiological bearing: (1) through its direct action as filth, whose decomposition may produce dangerous results; (2) as a vehicle for the transmission of "specific" contagion or infection.

It is not necessary here to enter into the discussion as to "specific" and "common" ferments; as to the existence or non-existence of "germs" which may act like seeds and produce diseases after their own kind; nor as to the possibility or extent of the *de novo* origin of disease. This discussion is familiar to the profession in each of its departments; it finds adherents on the positive and on the negative sides; and it promises to continue, still, without definite conclusion. Fortunately, the practical bearings of the question are not necessarily affected by these considerations. We have to do with the facts of disease production and with the methods of disease prevention, rather than with the theories by which the facts are to be accounted for, and the ultimate reasons why the methods are effective.

It is hardly worth while to adduce evidence to prove that human excreta are a cause of disease. The most elementary literature of the profession accepts the fact. The reports of the medical inspectors of the English health department in the four years 1870 to 1873 cover investigations as to the causes of certain diseases in one hundred and forty-three different localities. In every instance, without a single exception, — sometimes as "bad drainage," sometimes as "excrement conservancy," and sometimes as "defective sewerage," — these diseases are ascribed to excremental causes. No physician need even be reminded of the direct detrimental influence of an improper treatment of this material. It was recognized in the time of Moses, and it has always been accepted, both by the reason and by the instinct of the whole human race. The point upon which enlightenment is needed (as much, perhaps, among the profession as among laymen) relates to those more intimate bearings of the subject, which are affected by those conditions of health or disease in the body whence the excrement proceeds, and by the modifying effect of certain methods of removal and final disposal.

Dr. John Simon (than whom no one is better qualified to form an opinion on the subject) believes that uncleanliness is to be reckoned "as the deadliest of our present removable causes of disease." Removable it certainly is, and the degree to which, not being removed, it may act as a producer of disease is fairly appalling to consider. Human excrement exerts its baleful influence on human life with every degree of intensity, according as it arises from absolute filth or comes with the modified, imperceptible, and unsuspected escape of gases through minor defects of our most trusted methods of house drainage. It may disgust us and drive us away by its intolerable stench, or it may come to us quite unannounced, dissolved in the clearest and most sparkling spring water, or suspended in the familiar atmosphere of our houses.

In rare instances, the intense stinking of accumulations of unventilated excrement produces death or disease by the direct action of their sulphureted hydrogen. This action is too unusual to claim attention here. Foul odors arising from excremental decomposition are a warning to our senses,— perhaps nothing more. The morbific influence, when it exists, may accompany these odors, but it is not of them, and it may come without them. It is quite certain that it may exist even in deadly quantity without the presence of associated gases which chemistry can detect. It often invades our houses accompanied by a smell so slight as to be undetected by those whose deadened senses have been trained to withstand a feebly tainted air. The poison may exist in water of obvious foulness, and it may equally exist in water which to the eye and to the taste seems pure and wholesome.

Before we can devise rational hygienic means of prevention, we must understand, so far as the present state of our knowledge permits, the method of its action. Here we come to the realm of pure hypothesis; but it is a hypothesis which is sustained by all the facts of causation and prevention as we know them. Long and careful observation as to the relations between uncleanliness and disease, between cleanliness and the prevention of disease, show that, although we may have mistaken the hidden means of action, we have brought causation and cause into logical and reliable relation with each other. The best accepted belief is this: —

(1.) Diseases of a diarrhœal character, whether seated in the intestinal canal alone, or involving the intestinal canal in its direct or indirect complications, are attended with the secretion or discharge of infecting material which escapes through the bowels, and gives to the excreta the power of communicating the disease to other bodies with which it or its effluvia may come in contact.

(2.) The excrement of healthy persons may, under certain unfavorable circumstances, exert such unhealthful influence upon susceptible bodies as to produce diseases which, once established in the living human being, become directly communicable.

(3.) Whether or not human excrement is to act as a vehicle for the transmission of disease, or as the original source of disease, depends, to a great degree, upon the conditions under which it is accumulated or under which its removal is effected. It is believed that, however pernicious it may be capable of becoming, it is possible so to control its conservation and disposal as to make it powerless to do harm.

This general statement of accepted theories of the subject will serve as a basis for what is herein set forth.

The diseases which may be considered as especially caused and transmitted by excrement are: all forms of epidemic diarrhœa, dysentery, typhoid fever, cholera, and, in general, all diseases in which the intestinal canal is subject to specific change, as scarlatina when it affects the bowels. The degree to which excremental causes, as distinguished from those arising from the decomposition of other organic wastes, are to be regarded as an originating source of diphtheria is by no means well established. Numberless cases — like that of the Murray family at Newport, where an accumulation of excrement from a leaking water-closet (under the house floor), coincided with an outbreak of this disease, in which seven members of a family of eight had the disease in well-marked form, six of them dying within two weeks — point strongly to direct causation; but it is not certain that all of these cases might not be sufficiently explained by reference to organic decomposition, the decomposing matters being other than excremental. That excrement may operate in connection with this disease, at least as hurtfully as other decaying substances, is unquestionable; but it would be prudent, for the present, to exclude diphtheria from the list under consideration. A general belief that all entero-zymotic diseases find their chief agency of extension in excremental contagia, has resulted from the evidence which has accumulated since the careful and conclusive investigations of Dr. John Snow concerning the spread of cholera in London through unmistakable excremental communication.

While it is not wise to carry positive statements too far, it is proper to refer in this connection to the conspicuous place that seems to be held by human excreta among those elements of filth whose decomposition under unfavorable conditions appears to give origin, and is known to give extension to other diseases than those mentioned above, — diseases which prevail with especial fatality where the conditions of existence are the most unwholesome. Whether by direct septic action, or by the indirect enfeebling of the system and lessening the power of resistance, the tainting of the atmosphere by such decompotion leads to, or greatly favors, such infections as erysipelas, septicæmia, pyæmia, and puerperal fever. On this subject Dr. John Simon says, "The pathological studies of late years, including, eminently, certain very instructive researches which Professor Sanderson has conducted, have clearly shown that in the 'common' septic ferment, or in some ferment or ferments not hitherto to be separated from it, there reside powers of disease production as positive, though not hitherto as exactly defined, as those which reside in the variolous and syphilitic contagia. Experimentally we know of this ferment that when it is enabled by artificial inoculations to act in its most effective way on the animal body, and, even more, when it has received a curious increment of strength which its first propagation within the living body seems to bestow on it, it shows itself one of the most tremendous of zymotic poisons. It rapidly in the one animal body develops disease, which then is communicable to another: febrile disease with inflammations numerous and intense, and including in marked degree one of the acutest known forms of intestinal inflammation and flux; . . . . infections which we sometimes see locally arising anew in unquestionable dependence on filth, but of some of which, when arisen, it is perfectly well known that they are among the most communicable of diseases." He further shows that this ferment, in its milder action, may lead to the development of tuberculous disease. The natural accession of this ferment through the breathing of fouled air, or the drinking of fouled water, may act only by a slow undermining of the constitutional power of resistance, but its frequent accompaniment or result is a development of phthisis or other tuberculous disease, or of the more marked forms of intestinal disease. "The mischief first done is of a sort which entails certain possibilities of extension: such, namely, that in the one instance by accidental contagion, as in the other instance by hereditary transmission, it may, for aught we know, indefinitely extend beyond the sphere in which filth first produced it."

Among diseases of excremental origin, enteric fever may be regarded as the most conspicuous and the most decidedly typical. So far as we know, the conditions under which excrement causes or communicates this disease are precisely the conditions which favor its deleterious action with regard to the others of its class.

No one else has stated more tersely and truly the scandalous relation in which civilized communities stand to these ever-present and deplorable scourges than that same master of vigorous English, the recent medical officer of the privy council of Great Britain, who says: —

"I would say that it is difficult to conceive, in regard to any causation of disease in a civilized community, any physical picture more loathsome than that which is here suggested; that apparently, of all the diseases which are attributable to filth, this, as an administrative scandal, may be proclaimed as the very type and quintessence; that, though sometimes by covert processes, ... yet far oftener in the most glaring way, it apparently has an invariable source in that which of filth is the filthiest; that apparently its infection runs its course, as with successive inoculations, from man to man by instrumentality of the molecules of excrement which man's filthiness lets mingle in his air and food and drink."

It is surely not necessary to recite here the long catalogue of conspicuous cases, known to the whole profession, which have for years past done duty as unquestioned evidence, to show the close connection between all epidemics of cholera, diarrhœa, dysentery, and enteric fever, and an obvious and unmistakable excremental pollution of air or water, or both. Original cases often arise where excremental causation cannot be proven; occasionally, where the cause seems clearly to have arisen from the decomposition of vegetable matter, kitchen waste, etc. Well-attested facts might easily be collected to fill a volume. In the mortuary report of the city of New Haven in October last, Dr. Lindsay states that the deaths from zymotics were "due to local unsanitary conditions; in every instance investigated he found unventilated privy vaults and cess-pools, often connected by untrapped pipes with living-rooms or sleeping-rooms, and this was very markedly true in the houses where the first cases appeared." "Almost all of these deaths might have been prevented by the known laws of hygiene. Indeed, Dr. Snow, of Providence, states that the cause of nearly all cases that occur in the city is breathing impure air from privy vaults or sink drains, or cess-pools, or drinking impure water, — whether in the tenements of the poor or in the mansions of the rich." It would be safe to say that, among the thousands of sanitary reports which have been published in recent years, not one in a hundred omits to call attention to the causation of zymotic diseases by clearly marked and perfectly remediable hygienic defects.

Recognizing as we all must the unquestionable truth of this universal deduction, it becomes our chief interest and duty to consider the available means of prevention. Our more obvious professional office relates to the question of cure ; but our higher professional and manly obligation must lead us to set far above this our duty to apply the means of prevention, not only in the daily walk of our private practice, but as members of the community, determined that the strongest influence and the highest authority shall be devoted to the work of universal prevention. Every case of disease originating by reason of a violation of perfectly well-known sanitary laws is a disgrace to our civilization, and an evidence of the literally criminal negligence of doctor, law maker, and health officer. "The hygienic means of prevention" referred to in our title are already sufficiently known. They need only to be made sufficiently widely known for these diseases, now so fatally active among our people, to become, like the plagues of the Middle Ages, diseases of the past. The lowest and most ignorant of our population avoid, as a matter of course, the conditions of life under which the plagues arose, and it is within the limits of possibility to lead them equally to shun the conditions by which they are now so ruthlessly scourged.

Our work has hitherto been too tame and too politic. Our sanitarians have, in a halting way, recommended such measures as they thought the community would easily accept, and have avoided the radical changes which they knew to be necessary to radical success. Probably no one who understands the subject would hesitate to admit that, if it were possible to secure the universal adoption of the best means of excrement removal and the proper conservation of other organic wastes, it would be possible entirely to eradicate certain of our gravest diseases. Those who believe in the controlling influence of the instinct of self-preservation will not be slow to recognize the fact that the first and most important step to be taken is to secure a popular realization of the methods of the present unconscious self-destruction. To this end it is our especial province to set forth, in a clear and unmistakable way, for the instruction of those who are the sanitary teachers of the public, the details of the work to be done and the reasons for their efficiency.

It seems to be demonstrated that the evacuations of the bowels have no effect in the production of the "common" ferment until a sufficient time has elapsed for decomposition to be set up in their constituent parts; also, that any specific ferment — or whatever we may choose to call the agency by which they transmit specific diseases — is of but little, if any effect, until it has undergone a certain process of development in connection with such decomposition. In other words, we have little to fear from freshly evacuated fæcal matter.

It may also be accepted as altogether probable, if not entirely demonstrated, that the condition under which the decomposition of fæcal matter takes place has a controlling influence over the character of the resultant products. Instant incineration will unquestionably destroy any ferments or disease-producing agencies with which fæces may be accompanied. The long and satisfactory experience with the earth closet, which has proved its efficiency under a great variety of circumstances, and especially as a barrier to the spread of cholera infection in the jails and military establishments of India, seems to make it safe to assume that the slower but equally complete destruction of fæces by oxidation within the pores of a mass of dry material is equally effective in this direction. This action of the oxygen condensed upon the interior surface of dry earth, charcoal, ashes, etc., is more rapid and efficient than is generally supposed. The writer has had occasion to observe it in a somewhat extended experiment. A family of four persons, using earth closets only, with but occasional exceptions, during a term of six years, was supplied with about two tons of absorbent material (dry earth and anthracite ashes). At the end of the term the accumulated mass, which had been used over and over again, at least ten successive times, was, to all appearance, not changed from its original condition. Neither the eye, the nose, nor the touch could detect any alteration. Careful chemical analysis showed its composition to be essentially the same as that of fresh earth prepared for closet use, as analyzed by Voelcker. The only variations were such as might be expected to exist between samples of earth taken from different sources. For instance, Voelcker's sample yielded 0.31 of nitrogen; ours, 0.28. Voelcker's contained 9.88 of organic and volatile matter; ours, 10.72. The contents of nitrogen in two tons of Voelcker's earth would be about 12 lbs.; in ours only 11 lbs.

It was estimated that the fæcal and renal additions to our material amounted to about 34 lbs. yearly for each person (dry matter), making a total of over 800 lbs., equal to twenty per cent. of the earth mixture. The added dry matter must have included over 230 lbs. of nitrogen. At the end of the experiment, our earth mixture probably contained no more organic matter or nitrogen than it did at the beginning. The whole 800 lbs. of added organic matter, including over 230 lbs. of nitrogen, had been destroyed by the oxidation of slow combustion as effectually as it would have been by the oxidation of quick combustion in a furnace.

The results of this experiment, which correspond with what we know of the destruction of both solid and gaseous organic matter in all admixture with aerated porous materials, serve to confirm and to explain the disinfecting action of atmospheric oxygen in all organic decomposition.

Effective scientific investigation is lacking to show the exact manner of development of the common and specific ferments of decomposing excreta. Analogy may be, here, our only guide. The study of the action of ferments as affecting the medium in which they are developed shows that their influence is modified, is indeed controlled, by the degree to which they are able to obtain their needed oxygen from the atmosphere. Yeast added to a fermentable liquid, amply supplied with air, flourishes with a rapid formation of carbonic acid. It has grown as a yeast-plant, but has caused no fermentation. The same spores mixed with a substance from which the air is excluded, as with beer-wort, in a barrel with only the bung open, find in the limited quantity of air absorbed by the liquid an inadequate supply of oxygen. The growth of the yeast-plant goes on and carbonic acid is produced, but, in the absence of other sufficient supply, the needed oxygen is obtained by the fermentative decomposition of the wort. Pasteur has described fermentation as *life without air*. All investigations concerning fermentation establish this fundamental principle: that its controlling condition is the entire or partial exclusion of air. We come now to an important hiatus in our chain of evidence, — a gap which can be filled only by careful experiment with the material under consideration. We know that *fermentative* decomposition can take place in excreta only with the total or partial exclusion of common air; we also know that low organisms, whose restricted growth induces fermentation, may grow and reproduce themselves in full force with full exposure to air. What it is now most necessary to learn is this: —

Does the morbific influence of human excrement reside in the reproductive spores of special organisms yielded to it by the diseased body, or of common ferments communicated to it otherwise; or does it reside in some condition of the material itself, which condition is due to fermentation? If the former, can these spores be produced by a growth of their particular organisms in freely aerated excrement; or do they require for their development a medium prepared for them by such an exclusion of air as will, under decomposition, change the character of the original dejections?

Until these questions are authoritatively answered, our reasoning on the subject must be less than scientific. In the present state of our knowledge, we are compelled to depend upon the imperfect results of restricted observation. At the same time, all indications point to the belief that with excrement, as with other organic wastes, the degree to which they cause or incite disease is in direct proportion to the degree to which their decomposition takes place without free exposure to atmospheric air. We know that by concentrating the action of oxygen upon organic matter through the medium of a porous covering like dry earth or charcoal, we secure a rapid, destructive decomposition, which, during long trial, has never been convicted — so far as the writer knows, has never been suspected — of producing any form of disease. The scattered deposit of fæces in the neighborhood of encampments is often a nuisance to the senses; but the health of the encampment is affected only when, for the sake of decency, conveniences are set up which lead to the accumulation of masses of excrement, to the interior of which the atmosphere has no access. Observation with this idea in view, concerning the relative influence of exposed privies as compared with that of those which are tightly inclosed, is probably wanting; but it is notorious that the outbreak of serious epidemics, especially of intestinal diseases, is traceable to unventilated cess-pools, unventilated sewers, and unventilated house drains much more often and to a much greater degree than any other source, save the contamination of drinking-water. The amount of evidence is less, but it is quite conclusive, which shows that where these unhealthful conditions have existed and have manifested themselves any reformation which excludes the air of these drains, sewers, and cess-pools from the interior of houses, even though they themselves may have remained unaltered, produces universal and decided benefit. Wherever the infection of houses by gases arising from such sources had existed over a considerable district, the improvement has always shown itself in a most unmistakable manner in both the death-rate and the sick-rate.

We shall not do all that it will ever become possible for us to do, if we accept the course here indicated, — that would be far too much to claim; but we shall do all that our present knowledge teaches us to do, and enough, as ample experience has shown, to prevent the spread of any intestinal infection. We now know enough to enable us to *suppress the cause* and to *remove the effect.*

(*To be concluded.*)

RECENT PROGRESS IN THE TREATMENT OF DISEASES OF THE THROAT.[1]

BY F. I. KNIGHT, M. D.

Mucous Patch in the Larynx, with General Tertiary Symptoms. — In opposition to the views of Whistler,[2] Dr. Beverly Robinson [3] exhibited the larynx of a man who had had syphilis five years. On the posterior surface of the epiglottis there was a small lenticular ulceration, which presented rather an opaline and eroded appearance, and was surrounded by an elevated margin. He believed it to be an opalescent mucous patch in the larynx, a condition which, despite the frequency with which they are said to occur by some authors, he had never seen before. He was also convinced that authors were mistaken in describing syphilitic lesions of the skin and those of the mucous membrane as occurring together, and having the same grade, and said the present was a case in point, the man suffering from well-marked tertiary symptoms at the same time that there was a mucous patch in the larynx.

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[1] Concluded from page 197.

[2] See last number.

[3] New York Medical Record, December 28, 1879.

Relation between Membranous Croup and Diphtheria. — The report of the committee appointed by the Royal Medical and Chirurgical Society three years ago to examine into the relation existing between the diseases commonly known respectively as membranous croup and diphtheria has been presented. The following is a summary of its conclusions:[1] —

(1.) Membranous inflammation confined to or chiefly affecting the larynx and trachea may arise from a variety of causes, as follows: —

(*a.*) From the diphtheritic contagion.

(*b.*) By means of foul water, or foul air, or other agents, such as are commonly concerned in the generation or transmission of zymotic disease (though whether as mere carriers of contagion cannot be determined).

(*c.*) As an accompaniment of measles, scarlatina, or typhoid, being associated with these diseases independently of any ascertainable exposure to the special diphtheritic infection.

(*d.*) It is stated, on apparently conclusive evidence, although the committee have not had an opportunity in any instance of examining the membrane in question, that membranous inflammation of the larynx and trachea may be produced by various accidental causes of irritation, — the inhalation of hot water or steam, the contact of acids, the presence of a foreign body in the larynx, and a cut throat.

(2.) There is evidence in cases which have fallen under the observation of members of the committee that membranous affection of the larynx and trachea has shortly followed exposure to cold; but their knowledge of the individual cases is not sufficient to exclude the possible intervention or coexistence of other causes. The majority of cases of croupal symptoms definitely traceable to cold appear to be of the nature of laryngeal catarrh.

(3.) Membranous inflammation, chiefly of the larynx and trachea, to which the term "membranous croup" would ordinarily be applied, may be imported by an influence, epidemic or of other sort, which in other persons has produced pharyngeal diphtheria.

(4.) And, conversely, a person suffering with the membranous affection, chiefly of the air-passages, such as may commonly be termed membranous croup, may communicate to another a membranous condition limited to the pharynx and tonsils, which will be commonly regarded as diphtheritic. It is thus seen that the membranous condition of the larynx may arise in connection with common inflammation or with specific disorders of several kinds, the most common of which in this relation is that which produces similar change elsewhere, and is recognized as diphtheria.

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[1] British Medical Journal, October 26, 1878.

In the larger number of cases of membranous affection of the larynx the cause is obscure (that is, in any given case it is difficult to predicate the particular cause in that case). Among those in which it is apparent, common irritation seldom presents itself as the source of the disease; accidental injury is but very infrequently productive of it. But few cases of undoubted origin from exposure to cold are on record; on the other hand, in a very large number of cases, infective or zymotic influence is to be traced. The membrane, even when chiefly laryngeal, is more often than not associated with some extent of a similar change in the pharynx or in the tonsils; and whether we have regard to the construction of the membrane, or to the constitutional state as evinced by the presence of albumen in the urine, it is not practicable to show an absolute line of demarkation (save what depends upon the position of the membrane) between the pharyngeal and laryngeal forms of the disease. The facts before the committee only warrant them in the view that when it obviously occurs from a zymotic cause or distinct infection, and primarily affects the pharynx, constitutional depression is more marked and albuminuria more often and more largely present, though in both conditions some albumen in the urine is more frequently present than absent. The most marked division indicated by the facts before the committee is that between membranous and non-membranous laryngitis. The committee suggest that the term croup be henceforth used wholly as a clinical definition implying laryngeal obstruction, occurring with febrile symptoms in children. Thus croup may be membranous or not membranous; due to diphtheria, or not. The term diphtheria is the anatomical definition of a zymotic disease, which may or may not be attended with croup. The committee propose that the term "membranous laryngitis" should be employed, for the avoidance of confusion, whenever the knowledge of the case is such as to allow of its application. The report was signed by W. Howship Dickinson (chairman), C. Hilton Fagge, Samuel Gee, J. F. Payne, H. G. Howse, R. H. Semple, and W. S. Greenfield (secretary).

Membranous Laryngitis from Eau de Cologne.[1] — Reid reports the case of a patient who, during a faint, received some cologne into her nasal passages, pharynx, larynx, and trachea. On the second day two small ulcers appeared in the pharynx, and a small piece of membrane was coughed up. Within ninety-two hours a perfect cast of the larynx, trachea, and left bronchus was brought up in a piece, with instant relief to all urgent symptoms. Patches of membrane remained on the nasal mucous membrane till the end of the seventh day. The temperature varied from 99.4° to 97.4°, the pulse from 130 to 88. No albumen appeared in the urine.

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[1] British Medical Journal, No. 939, 1878. London Medical Record, May 15, 1879.

The Great Contagiousness of Diphtheria. — American physicians have not yet, we think, been sufficiently aroused to the very great danger of contagion and development of the worst forms of the disease from patients who are mildly affected. In his account of the outbreak of diphtheria in the grand ducal family of Hesse-Darmstadt, Oertel[1] says the virulence of the imported infectious matter, its direct transmission by kisses, and the quantum which was brought into play by this mode of transmission are of grave importance. We are fully justified in making direct use here of the results of experimental investigations and attempts at inoculation. The intensity of the affection, the degree of the anatomical lesions, and the rapidity with which the process destroys the life of the animal were in all Oertel's experiments, under like conditions, proportionate to the quantity of inoculated diphtheritic matter. We likewise see in practice that those cases run the most rapid and most fatal course in which *direct* transmission of contagious matter has taken place. Proof is to be found in the number of physicians who have fallen victims to the disease while in attendance on such cases.

Oertel says the diphtheritic contagium, the parasitical nature of which has become a conviction of his, is little volatile, is disseminated especially in the diphtheritic membranes and in the buccal fluid; and the infection takes place, in most cases, by its direct transmission, either by means of the atmospheric air, or by touching objects to which it adheres. Such objects are especially those coming in contact with the mucous membrane of the buccal cavity, etc., as spoons, tumblers; also pocket handkerchiefs, etc. The propagation of the diphtheritic contagium is much rarer, and we shall have to admit this way of transmission only when we are really in the position of completely excluding all other possibilities. It should be remembered by our readers that out of a household of sixty-eight persons only the members of the grand ducal family were affected (six of whom were attacked). Oertel says that diphtheria was imported into Munich from without in 1863, and has prevailed there ever since.

The treatment pursued in the case of the grand ducal family was that which Oertel has used for more than twelve years, and which he says he still finds the most efficacious in comparison with other modes. It consisted of isolation, inhalation of a disinfectant spray every hour or half hour for fifteen minutes or longer, and inhalation of hot steam (112° to 122°). The following solutions were made use of according to the period of the affection: 2.5 per cent. solution of potass. chl.; a 0.1 per cent. solution of salicylic acid; and, in the case of the grand duchess, when the septic decomposition began to become alarming, a

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[1] British Medical Journal, January 11, 1879.

0.25 per cent. solution of permanganate of potash, injections of freshly prepared dilute chlorine water, the solution containing from twenty-five to thirty per cent. of the officinal chlorine water. In those instances in which the fibrinous exudations began to involve the larynx, either the fluids just mentioned were exchanged for lime-water, or the latter was inhaled alternately with the others. Oertel believes, after experiment and bedside practice, that lime-water is still the best means for the solution of fibrinous membranes. Internally the fever and the septic infection were combated by the administration of salicylic acid and benzoate of soda in large doses (the grand duchess could not take quinine), and everything was done to keep up the strength by wine, arrack, cognac, and the ethereal tincture of the acetate of iron.

Oertel does not believe in the specific action of sulphur; yet it was used in some of the cases, so many letters came, especially from England, urging its use. [It is strange that all of these cases recovered.] Articles which had come in contact with the patient were disinfected; also all the rooms and corridors.

Excision of the Epiglottis. — Dr. William Porter, of St. Louis,[1] has led the way in an operation which may not improbably be performed hereafter, not only for morbid growth, but for other less serious though very annoying conditions. Porter's patient had a cartilaginous growth on the edge of the epiglottis, and the diseased mass, with quite one half of the epiglottis, was removed on a line from the upper right margin to the lower left side, just in front of its attachment. Prophylactic tracheotomy was thought unnecessary, as the patient had perfect control of his throat. Antero-posterior rectangle forceps with cutting edge was used, and the hæmorrhage was quickly checked by passing a sponge covered with Monsel salt over the cut surface. The profuse granulations which appeared were touched from time to time with nitrate of silver. The margin healed in a fortnight. At no time was deglutition more difficult than just previous to the operation, and six weeks later there was little, if any, functional disturbance.

[It seems as if this might be a proper operation in those cases in which a pendent relaxed epiglottis is constantly irritating the posterior wall of the pharynx. — Rep.]

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

REPORT OF THE EXECUTIVE BOARD ON THE WORK OF THE MEDICAL EXAMINERS FOR THE YEAR 1878.

The executive board has the honor to report that of the sixty-two medical examiners who are members of the Massachusetts Medico-Legal Society, forty-two have reported their work for the year 1878. Of these, twenty-one have sent *complete* returns, — in other words, they have reported all their cases in detail, as well as made their "annual return;" two have made no annual return; nineteen have made no reports of cases; one sends an incomplete return of autopsies only.

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[1] American Journal of Medical Sciences, April, 1879.

From the forty annual returns it appears that the

Number of views made has been	828
Number of views followed by autopsy	196
Number of autopsies refused by authorities	none
Inquests held (included in foregoing): —	
(*a*) on recommendation of medical examiner	171
(*b*) without his recommendation and not in railroad cases	1
Inquests at which medical examiners testified	96
Cases reported by medical examiner as probably resulting from violence, in which no inquest was held	16
Deaths from natural causes	328
Fatal railroad accidents	117
Other fatal accidents	214
Deaths from suicide	92
Deaths from violence at the hands of others	68
Prosecutions resulting	30
Convictions resulting in cases finished	19

Comparing these figures with those for the six months, July to December, of 1877, during which the new law was in operation, we find the following: —

	In six months of 1877.	In 1878.
Views	443	828
Autopsies	116	196
Inquests	99	172

The relative proportions of views to autopsies and inquests vary but little for the two periods. When we compare the causes of death we find a difference in favor of 1878, thus: —

	Percentage in six months of 1877.	In 1878.
From natural causes	23.	39.6
" railroad accidents	17.3	14.
" other accidents	29.	25.8
" suicide	16.	11.
" violence proceeding from another	11.	8.2

The *percentage* of convictions to prosecutions was in six months of 1877 23.8; in 1878, 63.

In attempting to carry our analysis further, we encounter the same difficulty as before, namely, that of the "views" appearing on the annual returns but five eighths have been reported in detail. From the northern district of Suffolk, from Lowell, and from Cambridge, we have no "reports of cases." But from the five hundred and fifteen cases which have been duly returned to the corresponding secretary, it appears that of forty-three suicides there were by

Shooting	15	
Hanging	8	
Drowning	7	
Cut throat	5	
Laudanum	4	
Arsenic	2	Poison, 7
Oxalic acid	1	
Leaping from window	1	

Of the above, one took laudanum before shooting himself; one shot himself before cutting his throat; another tried hanging and shooting before he cut his throat. Two suicides first attempted murder, in one case successfully. One of the suicides by arsenic was an arsenic-eater. Ten suicides were known to have been insane.

Of seventy-eight accidental deaths, not by railroad, —

37 were by drowning (4 following shipwreck).
2 from asphyxia by coal gas.
2 from asphyxia by illuminating gas.
2 from suffocation in a well while blasting.
6 from falls.
7 from falling bodies.
5 run over by horse or vehicle.
1 by explosion of nitro-glycerine.
3 from machinery in motion.
1 from arsenic.
2 from scalds or burns.
1 from overlaying in bed.
5 from shooting.
1 from incised wound.
2 from freezing and exposure to cold.
1 from lightning stroke.

Of still-born infants and infants less than one week old, there were thirty-nine. Fifty-two deaths were reported as the direct or indirect result of intoxicating drinks.

Of deaths reported as by violence (proceeding from another), —

10 were caused by assault with axe, club, iron bar, or other instrument, producing injuries of the head.
4 by shooting.
2 by drowning.
2 by infanticide.
2 by cuts with knife.
1 by injury of bladder.
9 by criminal abortion, or attempts at the same (1 by oil of cedar; 1 by oil of tansy; 1 by turpentine injected into the uterus; others by instrumental or other means).[1]

One view was made upon a human leg found on the sea-coast, but not included in the examiners' annual summary.

One noteworthy point of difference between our Massachusetts reports and those from England, and also the mortality reports of our Southern States, is in the number of cases of infant suffocation in bed,— one only appearing in our reports for 1878; while in a single year one English coroner held ninety inquests on children "overlaid," or suffocated in bed. Most of these English cases occurred on Saturday night. In eight years three thousand six hundred and six were "suffocated by bed-clothes."[2]

Under the *régime* of the medical examiner, many cases of malpractice among irregular practitioners are brought to light, which would have been covered up or slurred over under the old coroners in the large cities.

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[1] Three of these deaths were through the malpractice of Mrs. Hayes, of Malden, and in one case of death following her practices the autopsy showed that pregnancy had not existed.

[2] Fourth Report Massachusetts Board of Health (1873), page 217.

If the three hundred and thirteen cases, of which we possess no more detailed knowledge than can be gathered from the annual summaries, had been duly reported to the corresponding secretary, and if to them had been added the cases of the twenty members who have neglected to make any return to this society, we should have nearly twice as much material to compare and analyze. The lessons deduced from this larger experience would be more valuable, and probably more trustworthy. If every member would overcome his indifference or his indolence, and report each "view" promptly, thoroughly, and methodically, it would be found to the advantage of the whole society, quite as much as to that of the secretary, since no man who does thorough and methodical work misses the satisfaction of finding that he has grown by such work.

Of the relative expenses of the coroner and the medical examiner no exact statement can be made at present, — the fees being paid by various officials, whose accounts have no connection one with another, and who report to no common centre. For views, autopsies, traveling expenses, and a portion of the burial expenses the county treasurer pays, while the expenses of inquests are paid in part by other officials connected with the courts. But those who, in different counties, have made, independently of each other, attempts to ascertain the cost entailed by the new system as compared with that of the old agree in estimating that it is from a quarter to a third less under the new than under the old.

In conclusion, the board wishes to acknowledge the very friendly and valuable assistance received from Dr. S. W. Abbott in making up this report. He took the burden at a time when the corresponding secretary was overworked and far from well.

THE NATIONAL DISPENSATORY.[1]

The Wood and Bache Dispensatory has held such prolonged sway in this field that we might expect no competitor would appear without a very careful preparation. So far as the pharmaceutical portion of the work is concerned our expectations are realized. Professor Maisch, whose name is a sufficient guarantee of accuracy, has in our opinion presented a very trustworthy pharmaceutical manual, which affords valuable information not readily found in any one book. In spite of his tersely expressed language, he seems to have omitted little that is needed. The substances of the materia medica (officinal and many unofficinal) are carefully described, and ought to be readily recognized by the statement of their appearance. The officinal character of each substance is stated, and if any unofficinal drug is mentioned its natural order and physical appearance is given in detail. The constituents or elements of the drugs are also described, so far as they may be known in modern pharmacy or chemistry; following this the preparations and their processes of manufacture are detailed; afterwards are mentioned the tests of purity of a drug or of its chemical character; next are given the preparations in which it may be found; finally, the physiological action, medical uses, and the administration are related, and these latter especially claim our attention.

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[1] *The National Dispensatory.* By Professor Alfred Stillé, M. D., and Professor John M. Maisch, Ph. D. Philadelphia: Henry C. Lea. 1879.

This portion of the book was in all probability edited by Professor Stillé, and is very much condensed. This may account somewhat for the dogmatic style used by the author, but would hardly justify the omission of doses of most of the preparations which have been so carefully described in the pharmaceutical portion; for in the article on arsenic, a dose (five minims) is mentioned with no particular preparation in the context; it is fair to assume that our author refers to Fowler's solution (liquor arsenicalis), though another solution (liquor arsenici chloridi) is mentioned on a previous page; again, under the head of administration, the only preparation and dose is that of arsenious acid. In the article on cannabis indica the dose of the solid extract only is given, though three officinal preparations have been previously described. The dose of digitalis is stated in grains, which might refer either to the powder or the solid extract; the fluid extract, the infusion, and tincture of digitalis are all mentioned, but the dose of neither is stated; the dose of digitoxin is incidentally mentioned in the text, though digitalin has been described as the active principle. We notice the same omissions in reference to belladonna and of many other officinal as well as unofficinal preparations of the materia medica; even in ipecacuanha, of which at least six officinal preparations are given, a mention of the dose only of the powder and infusion occur. Occasionally the doses are specified in the metric system. We will not multiply the instances of this omission, which may have been intentional: whether this supposition be true or not, it seems a serious defect in a work of the scope which this professes to have.

He who reads the therapeutical portion of this book with the hope of seeing an epitome of our present knowledge may be discouraged at the rather loose manner in which the effects of medicines which have been lately introduced to the profession are described. The physiological action of salicin is mentioned as if all its virtues were comprised in an acid, and the therapeutical effects of the acid, salicylate of soda or of quinia, and salicin are not presented under the head of each of these medicinal agents, but we get rather a confused idea of all. Our author says (page 72) salicin "when taken internally has the same effects as salicylic acid in preventing the fermentation of urine in the bladder, because in the system it is converted into that acid;" and (page 1215) of salix, "Its active principle, salicin, does not, like quinia, exert any marked influence in preventing or retarding putrefaction or fermentation." These two statements are each mentioned under the head of physiological action.

The medical uses of dialyzed iron are very curtly expressed; after the painstaking way in which its pharmaceutical preparation is described, the reader will hardly be satisfied with the information received from Professor Stillé's evident prejudice against the medicinal agent. The same remark might be appropriately made in connection with the article on pepsin. After a careful reading of this portion of the Dispensatory, we can hardly refrain from expressions of surprise that Professor Stillé should allow his own personal experience with medicinal agents to outweigh the patient researches of men whose whole life has been devoted to the study of some especial drug. For instance, the therapeutical effects of digitalis are given almost entirely from the author's individual experience, and from his writing we should be likely to assume the author had been endeavoring to see how much was wrong in the experiments and observations of others, among whom we might name Traube and Fothergill, rather than how many of their theories were proved to be right. The practical application of his views would tend largely to a skeptical disbelief in the utility of prescribing this drug in organic disease of the heart. While admitting that digitalis produces a tonic action upon the cardiac muscular fibres, especially of the left ventricle, he denies this tonic action upon the arterial tissue (page 504): "That digitalis does not give a real increase of power to the heart is shown, ... but beyond this it tends to obstruct the cardiac circulation, and, by suddenly preventing the free passage of blood through the heart, to cause syncope." We will not discuss this point more fully, but leave the general reader to judge of the truth of our criticism. It would seem that a dispensatory possessed just the field for a discussion of the action of single or continued doses, the proper dose to produce certain effects of the given drug, without inducing secondary or toxical actions. This has not been attempted so far as our observation goes, in this book. The analytical index is very conveniently arranged and full.

KLEIN AND SMITH'S ATLAS OF HISTOLOGY.[1]

THE third and fourth parts of this admirable work deserve all the praise which we gave to their predecessors. Indeed, the more we see of this work the better we like it. The third part takes up fibrous connective tissue (the corpuscles had been discussed in the second), and gives a good account of the different forms. Then come fat cells and pigment cells. The authors point out the resemblance of adipose to glandular tissue. "It is a tissue possessed of an afferent artery, one or more efferent venous branches, and a rich net-work of capillary vessels supplying the elements of the tissue, namely, the fat cells. The meshes of the net-work are relatively small, in some places embracing only one, in others two or three elementary fat cells. These latter are arranged, by means of connective tissue, in smaller or larger groups, lobules, and these, again, are aggregated into lobes. As in other gland tissue, so also here, each lobe and lobule have their respective branch of artery and vein (or veins)." It is shown later that what at one stage is lymphatic tissue is liable, under favorable circumstances, to be transformed into fat. This part contains also an account of cartilage.

The fourth part is devoted to bone and to its development. The difficulties that beset the latter branch of the subject are well known. We have wrestled with a good many accounts of the phenomena of ossification and growth of bone, and have generally suffered severely; our ideas on the matter have, indeed, been repeatedly dislocated. Now we will back any student who is properly trained, patient, and industrious to being equal, in the language of Silas Wegg, to "collaring and throwing" the adversary on the spot. We are not familiar with anything so good on the subject. The illustrations are very handsome one of an injected specimen stained both with carmine and hæmatoxylin being especially noteworthy. T. D.

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[1] *Atlas of Histology.* By E. KLEIN, M. D., and E. NOBLE SMITH, L. R. C. P., etc. Parts III and IV. Philadelphia: J. B. Lippincott & Co. London: Smith, Elder & Co. 1879.

THE HEALING OF ARTERIES.

One of the most difficult, and, at the same time, important problems in the study of repair is the solution of the mystery enshrouding those processes by which blood-vessels are restored after injury. We have here a combination of conditions essentially different from those which concern the repair of any other structure of the body; for not only the solid vessel, but also its fluid contents, seem to play a conspicuous part in the regenerative changes. It is a subject which has interested surgeons ever since the days of Ambrose Paré, but during the last century and a half it may fairly be said to have claimed the attention of scientific observers. It is a gratifying sign of the tendency of American physicians to devote more of their time to the scientific departments of medicine, to add to, as well as to utilize, medical knowledge, that the recent investigations of Dr. E. O. Shakespeare, of Philadelphia, have enabled us to obtain a much more satisfactory understanding of the nature of the healing process in arteries, and to unravel many of its seeming complications. These were embodied in a paper to which the Warren Triennial Prize for 1877 was awarded, and with a few additions they have recently appeared for the first time in print as No. VII. of the Toner Lectures, published by the Smithsonian Institution.

The question on which observers have been chiefly at variance relate to the part played by the thrombus in the process of repair. Does the thrombus become organized and form the cicatrix, or does it play a perfectly passive rôle and finally crumble up and disappear, the wall of the vessel doing the work? One view or the other has alternately prevailed, until the discovery of the peculiar habits of the white corpuscles by Cohnheim seemed to throw the balance in favor of the thrombus as a healing agent. Such, in fact, is the position assigned to it by the standard works on pathology to-day, as, for instance, Billroth. The views thus freely disseminated have received recent application to the healing of wounds when extensive blood clots under the protecting influence of the Lister dressing are supposed to form the future cicatricial tissue. Moreover, now that the fixed connective tissue cell was considered to take no active part in inflammation, the vessel walls had to be looked upon more than ever as dependent upon the thrombus for the supply of the new tissue. We have not the space to give even a concise summary of the careful and extensive series of experiments of the author. Suffice it to say that they settle most conclusively that the blood clot has nothing whatever to do with the formation of the cicatrix. It acts simply as a temporary barrier to the course of the blood, and as a foreign body whose tendency is to produce a certain amount of irritation in the adjacent internal coat of the vessel. The healing of an artery after ligature is effected by the formation of a plug of tissue which emanates from the endothelium and subjacent cellular elements of the tunica intima. To this structure he has given the name *plastic clot*, to distinguish it from the *fibrinous or blood clot.* The former develops beneath the latter, and gradually pushes it upward, until, separated from the adjacent walls, it finally disappears. The structure of the blood clot is peculiar, not being a simple, homogeneous mass, as is usually supposed: it has a stratified arrangement lying in spiral coils, the blood column retaining its cylindrical form as it is coiled up in the distended cul-de-sac of the stump. These are a few of the points settled by his investigations, but the tracing of the plastic clot through its various stages of development is alone of great importance as disposing of the organization of the thrombus theory more effectually than any observations with which we are acquainted. Dr. Shakespeare shows the qualities of a good observer, and if he continues his researches in the domain of pathological histology will be sure to give a good account of himself. We would also call attention to the value of such encouragement as the funds of the Warren prize and Toner lectures hold out for good original work of this kind.

PRIVATE ASYLUMS.

Readers who consult our advertising columns will observe that the number of private asylums for the treatment of mental and nervous affections increases both in Massachusetts and in other States, partly, perhaps, a result of the agitation against the larger hospitals. But these smaller institutions fill a different sphere, since they are intended only for a class of patients who are able to pay remunerative fees, as is the case with but a small proportion of the asylum patients. Such invalids can, as a rule, be made much more comfortable in a private establishment, where the aim of the physician in charge is to supply, as far as circumstances will admit, beside suitable medical treatment, the pursuits and diversions which are most congenial or desirable.

As before observed, we are informed of several such institutions, all of which are well and successfully conducted in this and the neighboring States. The one lately established by Dr. Walter Channing, being within convenient driving distance of Boston, we have visited personally. The high character, skill, and care of Dr. Channing, the well-equipped and commodious house, with its charming grounds and beautiful neighborhood, appear to offer all the desiderata for promoting that state of mind in the invalid which is most conducive to cure. In many such cases the comforts, even luxuries, of domestic life are of prime importance.

THE MEDICAL REGISTER FOR NEW ENGLAND.

The success of Dr. F. H. Brown's undertaking, by which we have been supplied with a book containing all the information needed by physicians in a large and populous section of the country, has been well deserved. In order that it may contain the very latest facts frequent editions are necessary, and we are glad to be able to announce that a new one is to be issued in October. Physicians should remember that the continued success of such a public-spirited work depends largely upon the support and assistance given it by the profession. It is valuable in proportion to the amount of accurate detail given, and this can be obtained only by the direct coöperation of those for whom the book is intended. It is particularly important that all societies and institutions of a medical character should be represented. All returns should be made at an early day to secure admission to the forthcoming edition. Those who have once availed themselves of this book will, we think, agree with us that it is an invaluable addition to the physician's table. It will serve as a model for all future registers of other parts of the country.

MEDICAL NOTES.

— The State Board of Health (Lunacy and Charity) are now engaged in an investigation of the merits of Mystic Pond as a water supply. The case was brought before them by the cities of Boston and Somerville, under the law forbidding the pollution of water supplies (the same wise laws of our State expressly *allow* bathing in Lake Cochituate!). The complaint is against four tanneries, the proprietors of which discharge refuse into tributaries of the pond. After a view of the premises, the parties polluting the pond agreed to enter the sewer provided by the city of Boston, and the hearing has been suspended for a few days to allow that to be done. There are several tanneries in another tributary of the pond, and large quantities of filth reach it indirectly from other sources still, and these will probably all be proceeded against in due time. The impurity, however, which now renders the pond water unpalatable, unsightly, and unfit to drink is of entirely vegetable origin, identified by Professor Farlow as the *Clathiocystis*, which is also found in pure pond waters, but probably in much less quantity than when associated with filth. Like the Niles case in Cambridge, these cases will without doubt result in a thorough investigation of the whole water-supply question, and it will certainly not be long that we shall see drinking-water peddled from door to door almost within sight from the State House, and policemen stationed to keep order among people rushing for spring water from a large city fully supplied with water-service pipes.

— During last month there have been severe and fatal cases of diphtheria and scarlatina along the valley of the Connecticut and Ammonoosuc rivers; also mild cases of typhoid fever. In Rumney, on Baker's River, there have been severe diphtheria cases; and a fatal cattle disease. This cattle disease will be more fully reported at another time.

— In a letter to the London *Lancet*, the writer quotes the following passage from a letter written by Edison: "I am at present experimenting on a stethoscope, with every prospect of success; but the instrument will be very expensive, and for this reason cannot come into general use. The microphone, so called, cannot be used for this purpose, as it translates extraneous sounds, and is in no way reliable."

— Dr. Millet, a French army surgeon, recommends powdered aloes as a dressing for wounds. It acts as a cicatrizant, and as a means of occlusion. It assuages the severe pains of wounds almost immediately, and requires renewal only at long intervals.

— The empress of Germany has offered a prize of 2000 marks ($500) for the best essay on diphtheria. The conditions are that the writer is to bring forward important *new* facts as to the essential nature of the disease, especially with regard to the infectious matter which propagates it, its dissemination, and the means for arresting its progress. The essays may be written in English, German, or French, and be sent to Prof. V. Langenbeck, Berlin, N. W., 3 Roonstrasse, on or before December 15, 1880. The committee of award consists of Professors Klebs, of Prague; Liebreich and Virchow, of Berlin; Von Nägeli and Oertel, of Munich; and Thiersch, of Leipsic. As is usual, a motto is to be attached, and a similar one in a sealed envelope.

— Efforts are being made in London to reform the coroner system. The *Lancet* advises the appointment of medical men as coroners. The committee appointed for the purpose recommends the election of legal coroners.

— The medical men of Berlin and neighborhood, in honor of the golden wedding of the emperor and empress, have subscribed the sum of 13,500 marks to found a charitable fund for the relief of such of their distressed brethren as shall have resided within the district at least two years, or of their widows and children.

NEW YORK.

— The new tenement-house law, which provides for the inspection and survey of tenements as regards their construction, sanitary condition, and population, went into practical effect on the 1st of August, when the corps of inspectors recently appointed, after having received full instructions from the president of the board of health, Professor Chandler, and Assistant Sanitary Superintendent Jones, commenced their labors in the seventeenth ward (on the east side), which is the most densely populated in the city. Each inspector was assigned a block, in which he was to visit every house, and he was then to furnish a report containing accurate information in regard to all the points designed to be embraced in the survey. The board of health has asked for a detail of sanitary police to assist the inspectors, and in order to defray the expenses of this force the board of apportionment has now assigned fifteen thousand dollars to the health department for the purpose.

— The police are generally supposed to serve in the capacity of protectors of society, but in such a high-handed manner have they been conducting themselves of late that one of the newspapers not inaptly styles their performances as the "plague of the locust," and society is fain to cry out, "Save me from my friends!" Thus to give but one or two instances out of many that might be mentioned, a respectable farmer from Bay Ridge, Long Island, was recently arrested and subjected to many indignities, it being alleged that he was "drunk and disorderly," when in reality he was suffering from paralysis and partial aphasia, and was perfectly sober. Again, an engineer, quite advanced in life, was arrested one evening for some supposed offense of a trifling nature, and was so severely clubbed by the officer who made the arrest that the next morning, when the latter was about to take him to court, he was so frightened at the bloody appearance of the prisoner that he took him to Bellevue Hospital instead, and left him, no doubt concluding that it was the most prudent course for himself not to appear against him. But this is not all. The next morning, when the old man was on his way to the hospital to have his wounds dressed again, he sat down on a doorstep to rest (his head being dizzy from loss of blood and the effects of the beating which he had received), he was arrested by another officer on the charge of drunkenness, in consequence of which he was sent to jail for five days, and his wounds allowed to take care of themselves.

— A woman in Brooklyn arrived at rather a hasty conclusion in regard to her husband the other day. The good man had been suffering for some time from cardiac disease, and while seated at dinner he suddenly fell to the floor. He presented every appearance of being dead, and an undertaker was summoned; but when the latter was about to lift the supposed corpse into his ice-box, what was his astonishment to hear it sneeze! Accordingly the ice-box was removed, and a physician sent for, and at the last accounts the patient was doing very well.

— The German Hospital and Dispensary in this city, being in need of funds, the various German societies recently held a very successful four days' summer festival for its benefit at Schützen Park, Union Hill, Hoboken, when music, fire-works, dancing, tumbling, racing, shooting, and all sorts of games were participated in by great numbers for the sake of charity.

CHARLESTON, S. C.

— Notwithstanding the opinion that disease may arise *de novo*, and that the restrictions of quarantine are as needless as they are inhuman, it is gratifying to announce that the quarantine laws have been rigorously enforced. To portect Charleston from refugees from Memphis the mayor has ordered even land quarantine, designating Yemasee on the Savannah and Charleston Railroad, Branchville on the South Carolina Railroad, and Florence on the Northeastern Railroad as the points beyond which they shall not pass. They have been no less vigorous as regards sea quarantine, for the revenue cutter Moccasin is all the while at quarantine ground carrying out the national quarantine laws. So far not a single case of fever is in port.

Dr. A. N. Bell arrived here the other day, sent by the National Board of Health as quarantine and sanitary inspector of the Atlantic coast from Norfolk, Va., to Brunswick, Ga., — a coast line of nearly a thousand miles. The editor of the *Sanatarian* is reported by the *Herald* as finding filth enough in many streets and lanes to *engender* any amount of yellow fever, which opinion if truthfully reported, we trust will not interfere with properly directed endeavors on his part to enforce a rigid quarantine.

— We called attention a few days since to the action of the city council in suspending such work as necessitated digging up the streets. This ordinance, prohibitory of any such work during the summer months, has again very much embarrassed Mr. Easterlin, engaged in putting up the poles for the telephone wires; considerable indignation was expressed, but the work has been resumed. Over one hundred poles are now in place, and should no further objections arise, and this enterprising business be rapidly urged on, in a very little while Charleston will undoubtedly transmit voices of praise for all the wisdom and learning of so indulgent a body as its city council.

— We have been pleased to learn that Dr. J. Lawrence Smith, a Charlestonian by birth and education, though for some years past a resident of Louisville, Ky., was elected member of the Institute of France, as successor to Sir Charles Lyell — having obtained forty-two out of forty-seven votes — in the department of mineralogy and geology.

LETTER FROM NEW ORLEANS.

Mr. Editor, — The appearance of yellow fever in this city is now known throughout the country, and its mode of origin and progress to the present time may be of interest to your readers.

The existence of the fever in New Orleans was not suspected until after the occurrence of several cases near Mississippi City, a watering-place on the gulf coast seventy miles east of us, which attracted attention a little more than two weeks ago. A servant-girl, belonging to a family residing about two miles from Mississippi City, had been living in a family named Stout, in the upper portion of the city. She returned home on July 13th, feeling unwell, and died on the 16th, with symptoms strongly suggestive of yellow fever. Other children of the family sickened in rapid succession, after July 18th, and the cases were investigated by physicians from New Orleans and Mobile, besides the local medical men. The Mobile and local physicians from the first regarded the cases as yellow fever, but most of our doctors inclined to pronounce them hæmorrhagic malarial fever, until the death of another child after black vomit and suppression of urine. Post-mortem examination confirmed the diagnosis of yellow fever, and settled the matter.

It also transpires, on investigation, that no less than seven members of the Stout family in New Orleans had previously undergone febrile attacks, of so mild a degree that the attending physician did not even suspect yellow fever, the first case having sickened as early as June 16th. The house occupied by this family had had cases of the fever in 1878, but the family had passed the summer near Mississippi City, and none of them had had the disease.

Except in the Stout family there was no further appearance of yellow fever in New Orleans until July 22d, when a young child of one of our physicians, living in that neighborhood, was taken sick. This child was born in the city, passed through last year's epidemic unharmed, and her case was not supposed to be yellow fever, being of a mild type, until the occurrence of a fatal case still nearer the residence of the Stout family, — an Italian girl, sixteen years of age, taken sick July 24th, and dying early on the 28th. Since then three other undoubted and two more presumable cases have occurred in the same neighborhood. Of this group of cases two have died, and the remainder may be regarded as convalescent.

In addition there has been one other case. On the evening of July 27th a Frenchwoman, who had formerly lived in New Orleans, but who arrived from France last January, and went to Morgan City in April, returned from the latter place with her child, three years old, which had sickened two days previously there. On the 28th the child had black vomit, and a physician was called in for the first time. Suspecting yellow fever, he came immediately to the office of the board of health, which is within four hundred feet of the house where the woman was staying, and I visited the case with him. We thought it best to suspend judgment till he could make an examination of the urine. Meeting again the following day, and he reporting the urine albuminous, we did not hesitate longer to declare the case yellow fever. After this day there was no more black vomit. The fever abated, and the child appeared better. Later an unfavorable change supervened, and the little patient died at the close of the seventh day. Up to the present time no other case has occurred in this locality, nor at Morgan City, so far as we learn. (Morgan City is a railroad terminus on Berwick's Bay, eighty miles west of New Orleans, and was visited by the fever in 1878.)

It remains to add that these few cases have led to numerous quarantine proclamations against New Orleans to the northward and eastward; but here our apprehension is less of a general epidemic than of interruption of intercourse with inland communities. Very truly yours, S. S. HERRICK.

P. S. The two presumptive cases above-mentioned are reckoned as yellow fever, making seven cases exclusive of the Stout family and the one case which which came through the quarantine on the steamship Baltimore, from Havana, in March. S. S. H.

NEW ORLEANS, 260 MELPOMENE STREET, *August* 4, 1879.

SHORT COMMUNICATIONS.

CORPORAL PUNISHMENT.

MR. EDITOR, — My attention has for a number of years been called to injuries caused by occasional cases of too severe or recklessly executed punishment of school-children. Foremost educators, while not believing it expedient to prohibit corporal punishment, acknowledge that injury, injustice, and sometimes death, even, do now and then occur from its use. These serious results may arise from fright, or from concussion of the brain produced by merely jerking the child about, or — the most frequent cause — inflicting the punishment upon the child's head. I have known death to occur solely from the fright, although fatal results are not likely to arise except from immediate blows upon the head. No one form of punishment is so dangerous as boxing the child upon the ear. Not only is injury to the organ of hearing often produced, but inflammation of the brain frequently follows, and death has been the result.

In the family this matter of injurious methods of chastisement is not by any means beyond our influence if we will but take pains to inform the people upon the subject. If corporal punishment is allowed at all in schools, its use ought to be carefully guarded. No teacher should be allowed to correct a child by rudely jerking it about; by striking it anywhere upon the head, or with any instrument whatever, except it be flexible and with smooth edges. These requisites are best fulfilled by a rubber strap with rounded edges. Moreover, no punishment should be permitted except it be inflicted in the presence of a principal, another teacher, or a school trustee, as a salutary check upon undue temper or excitement. Every case of corporal castigation should also be reported in writing to the board of school trustees, stating the offense of the pupil and the manner and severity of the punishment. I have known the above rules, adopted by a board of school commissioners, to reduce the number of cases of corporal punishment eighty-eight per cent. in one month, and the schools continued meanwhile even more orderly and satisfactory than before.

I am about collecting statistics of serious and fatal injuries caused by corporal punishment, and I write this article to request all the readers of this journal to forward to me statistics and history of all cases that may have come to their knowledge; state the date, place, name of child, character of chastisement, and its results; also the offense for which the punishment was inflicted. Add other points, history, etc., if time and inclination suggest.

I urge all to give the subject the little attention needed, to write me the main facts at least of all cases that they have known, and thereby make the report more valuable. The information thus obtained I will communicate through this journal.[1]

BLOOMINGTON, ILLINOIS. B. P. MARSH, A. M., M. D.

[1] Other journals please copy.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 2, 1879.

Cities.	Population estimated for July, 1879.	Reported Deaths in each.	Annual Death-Rate per 1000 during the Week.	Percentage of total Deaths from				
				The Principal "Zymotic" Diseases.	Diarrhœal Diseases.	Pneumonia.	Diphtheria and Croup.	Scarlet Fever.
New York	1,085,000	636	30.56	38.37	30.35	3.46	1.73	1.26
Philadelphia	—	—	—	—	—	—	—	—
Brooklyn	564,400	280	25.86	40.00	30.00	3.93	3.57	.71
Chicago	—	228	—	38.59	28.51	.88	3.94	3.94
St. Louis	—	150	—	39.33	30.00	2.67	—	—
Baltimore	365,000	167	23.85	34.73	22.16	3.59	1.19	4.79
Boston	350,000	202	30.10	42.57	36.63	3.47	1.49	.99
Cincinnati	280,000	103	19.18	31.07	23.30	1.94	.97	5.82
New Orleans	210,000	—	—	—	—	—	—	—
District of Columbia	160,000	86	28.03	27.91	19.77	1.16	1.16	—
Cleveland	—	78	—	47.44	43.59	—	—	—
Pittsburgh	—	86	—	44.19	30.23	2.33	4.66	2.33
Buffalo[1]	—	—	—	—	—	—	—	—
Milwaukee	—	49	—	42.86	34.69	—	6.12	—
Providence	101,500	37	19.01	43.24	35.14	2.70	—	5.41
New Haven	60,000	22	19.12	18.18	13.64	—	—	—
Charleston	57,000	45	41.16	24.44	8.89	2.22	6.67	—
Nashville	27,000	11	21.24	45.45	18.18	—	—	—
Lowell	53,300	31	30.31	29.03	29.03	—	—	—
Worcester	52,500	30	29.80	56.67	46.67	—	6.67	—
Cambridge	50,000	28	29.20	60.71	50.00	3.57	7.14	—
Fall River	48,500	32	34.40	46.88	28.13	—	6.25	12.50
Lawrence	38,200	16	21.84	43.75	37.50	—	6.25	—
Lynn	34,000	13	19.94	38.46	30.77	—	—	—
Springfield	31,500	18	29.79	27.78	27.78	5.56	—	—
New Bedford	27,000	18	34.76	38.89	38.89	—	—	—
Salem	26,400	9	17.78	66.67	44.44	—	11.11	—
Somerville	23,350	10	22.33	30.00	20.00	—	—	—
Chelsea	20,800	7	17.55	28.57	14.29	—	14.29	—
Taunton	20,200	4	10.32	25.00	25.00	—	—	—
Holyoke	18,200	19	54.44	42.11	26.32	5.26	—	5.26
Gloucester	17,100	3	9.15	—	—	—	—	—
Newton	17,100	—	—	—	—	—	—	—
Haverhill	15,300	9	30.67	33.33	33.33	11.11	—	—
Newburyport	13,500	8	30.90	37.50	37.50	—	—	—
Fitchburg	12,500	2	8.34	—	—	—	—	—

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[1] Total not reported; principal infectious diseases 27, diarrhœal diseases 9, pneumonia 1, diphtheria and croup 6, scarlet fever 4.

Two thousand four hundred and thirty-seven deaths were reported, about the same as for the previous week, allowing for cities not heard from: 970 from the principal infectious diseases, 734 from diarrhœal diseases, 284 from consumption, 64 from pneumonia, 62 from diphtheria and croup, 48 from scarlet fever, 31 from bronchitis, 31 from whooping-cough, 30 from malarial fevers, 23 from typhoid fever, 16 from measles, 13 from cerebro-spinal meningitis, 10 from erysipelas, seven from trismus nascentium, one from small-pox (New York). From *whooping-cough,* nine deaths were reported in New York, seven in Brooklyn, five in Boston, two in St. Louis, District of Columbia, and Pittsburgh, one in Cleveland, Cambridge, and Salem. From *malarial fevers,* nine in New York and St. Louis, six in Brooklyn, two in Baltimore and Nashville, one in New Haven and Charleston. From *typhoid fever,* four in Baltimore, three in New York, District of Columbia, and Charleston, one in Brooklyn, Cleveland, Pittsburgh, Buffalo, Milwaukee, and Nashville. From *measles,* three in New York and Pittsburgh, two in Brooklyn, Chicago, St. Louis, and Baltimore, one in Cleveland and Worcester. From *cerebro-spinal meningitis,* three in Buffalo, two in New York, Baltimore, and Holyoke, one in Chicago, Providence, Lynn, and Somerville. From *erysipelas,* four in New York, three in Buffalo, one in Baltimore, Cincinnati, and District of Columbia. From *trismus nascentium,* five in Charleston, one in Baltimore and District of Columbia. The death-rate of whites in District of Columbia was 21.09; of colored 41.41. Yellow fever declined in prevalence and fatality in Memphis, with no indication of probable prevalence elsewhere.

Consumption, bronchitis, whooping-cough, and diarrhœa were somewhat more fatal than in the previous week; scarlet fever less so. In eighteen of the nineteen cities of Massachusetts, with an estimated population of 841,950, the gradual increase in diarrhœal diseases continued.

The weather was hot and dry; mean temperature in Baltimore 79.6°, range 22°. The meteorological record for the week in Boston was as follows: —

Date	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Mean.	Mean.	Maximum.	Minimum.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Duration.	Amount in Inches.
July 27	29.797	74	85	59	97	60	73	77	NW	W	W	5	9	8	O	F	F	—	.23
" 28	29.942	76	88	66	66	68	78	71	W	E	W	9	6	4	F	C	O	—	—
" 29	29.938	76	90	63	87	55	82	75	O	SW	SW	0	4	5	H	F	F	—	—
" 30	30.003	75	89	69	90	69	75	78	SW	SE	S	4	5	8	F	F	F	—	—
" 31	30.138	72	83	68	75	63	75	71	NW	E	SE	4	8	5	F	C	C	—	—
August 1	30.092	76	91	66	78	52	70	67	W	E	SW	5	7	7	C	C	C	—	—
" 2	29.965	82	95	70	81	38	70	63	W	W	SW	10	10	13	C	F	C	—	—
Week.	29.982	75	95	59				72	SW			1082 miles.						6.5	.23

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening.

During the week ending August 9th there were 30 deaths from yellow fever and 134 cases (beside 18 reported late Saturday night) in Memphis, showing pretty nearly the same number of deaths as in the previous two weeks, but a very large increase in the number of cases reported, and, excluding the two convalescent cases in New Orleans, there are none others known in the Southern cities, there being a few at the various quarantine stations.

For the week ending July 12th, in 149 German cities and towns, with an estimated population of 7,533,030, the death-rate was 27.5 (previous week 28.1), with a moderate increase in scarlet fever, diphtheria, whooping-cough, and acute pulmonary diseases, and a decrease in diarrhœa and consumption. Three thousand nine hundred and eighty-one deaths were reported: 789 from diarrhœal diseases, 466 from consumption, 291 from acute diseases of the respiratory organs, 98 from diphtheria, 55 from scarlet fever, 51 from whooping-cough, 39 from measles, 38 from typhoid fever, 10 from puerperal fever, two from small-pox, one from typhus fever. The death-rates ranged from 12.0 in Kiel to 43.2 in Berlin; Königsberg 36.2; Dantzic 37.8; Breslau 31.8; Munich 30.3; Stuttgart 19.2; Dresden 23.7; Leipsic 15.3; Hamburg 20.0; Hanover 16.6; Bremen 20.6; Cologne 21.9; Frankfort-on-the-Main 22.3; Strassburg 35.5. Also for the same week, Vienna 29.8; Prague 33.5.

For the week ending July 19th, in the 20 English cities having an estimated population of 7,383,999, the death-rate was 17.1, a decrease of 0.5 from the previous week, showing an increase in measles and a moderate decrease in pulmonary diseases; whooping-cough, diarrhœa and fever, scarlet fever, diphtheria, and small-pox remained nearly the same. The death-rates ranged from 11.2 in Plymouth to 22.4 in Newcastle; London 17.2; Brighton 12.8; Bristol 15.7; Birmingham 16.2; Liverpool 19.6; Manchester 19.6; Leeds 16.7. For Edinburgh 18, Glasgow 16, Dublin 29 (small-pox the same). In the same week, Paris, 21.6; Geneva, Basle, Berne, Lausanne, and Zurich 22.4.

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Books and Pamphlets Received. — The Brain and its Diseases. Part I. Syphilis of the Brain and Spinal Cord, showing the Part which this Agent plays in the Production of Paralysis, Epilepsy, Insanity, Headache, Neuralgia, Hysteria, Hypochondriasis, and other Mental and Nervous Derangements. By Thomas Hutch Douse, M. D., etc., etc. New York: G. P. Putnam's Sons. 1879.

Precautions Requisite in the Administration of Ergot. By J. N. Compton, M. D. (Detroit Lancet.)

Thirty-sixth Annual Report of the Managers of the State Lunatic Asylum, Utica, N. Y., for the Year 1878.